Monetary Policy in an Uncertain World: The Case for Rules

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Since monetary policy operates in an uncertain world, discretionary policymaking relying on macroeconomic models of the economy is a weak reed upon which to base policy. The complexity of economic systems and constant changes in the underlying data mean errors may occur in a discretionary regime that can lead to monetary and financial instability. The 2008 financial crisis is a case in point: central bankers and their expert staffs failed to anticipate the crisis, and may have worsened it by keeping policy rates too low for too long (Taylor 2012).

Moving to a rules-based regime would not eliminate radical uncertainty, but it could decrease institutional uncertainty—or what Robert Higgs (1997) has called "regime uncertainty"—and thus reduce the frequency of policy errors. Higgs focused on the uncertainty caused by fiscal and regulatory policies that attenuated private property rights by decreasing expected returns on capital. A discretionary monetary regime

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increases uncertainty about the future purchasing power of money and thereby undermines an important property right.

Radical uncertainty is a given, but institutional uncertainty can be reduced by adopting credible rules. As Karl Brunner (1980: 61) has pointed out,

> We suffer neither under total ignorance nor do we enjoy full knowledge. Our life moves in a grey zone of partial knowledge and partial ignorance. More particularly, the products emerging from our professional work reveal a wide range of diffuse uncertainty about the detailed response structure of the economy. . . . A nonactivist [rules-based] regime emerges under the circumstances . . . as the safest strategy. It does not assure us that economic fluctuations will be avoided. But it will assure us that monetary policymaking does not impose additional uncertainties . . . on the market place.

Some congressional leaders think it's time to create a rules-based monetary regime. The Financial CHOICE Act of 2017 (H.R 10), which recently passed the House, would make the Fed responsible for specifying a monetary rule and justifying to Congress any Fed deviations from it.[1]

Whether the CHOICE Act passes or not, it is important to consider alternative monetary rules and to be prepared to make the case for rules over discretion when the opportunity for reform arises.

This article begins with a discussion of the case for rules over discretion in the conduct of monetary policy and draws upon the theory of monetary disequilibrium to

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[1] See Financial CHOICE Act of 2017 (H.R. 10):
https://financialservices.house.gov/uploadedfiles/hr_10_the_financial_choice_act.pdf.

support that case. In particular, a credible monetary rule can eliminate what Clark Warburton (1949) called "erratic money," which he viewed as the chief cause of business fluctuations.

Various monetary rules will be examined, so will the difficulty of implementing them under the current environment in which unconventional Fed policy has plugged up the monetary transmission mechanism. Particular attention will be paid to rules designed to stabilize the path of nominal spending. The article ends with a call to establish a Centennial Monetary Commission to evaluate the Federal Reserve's performance over its 100-plus years and to consider the ability of alternative rules to reduce regime uncertainty.

The Case for Rules over Discretion

It is sometimes argued that discretionary monetary policy is superior to a rules-based monetary regime because discretion includes the option to adopt a rule. That argument, however, begs the question. The real issue is whether a robust, credible monetary rule that constrains policymakers to a long-run objective, and is strategic in nature, is superior to a purely discretionary regime that focuses on period-by-period optimization using various tactics without committing to any rule.

Those who favor discretion over rules also argue that no rule is permanent and thus judgment is needed to choose among rules. But choosing among rules is different from having no rule to guide policymakers, which is what is generally understood by a discretionary monetary regime. Under the Taylor rule, for example, one has to define the goal variables—the inflation gap and GDP gap—and use discretion in assigning

numerical values to the coefficients on the goal variables. Nevertheless, it is still a rules-based monetary regime with a definite strategy as opposed to pure discretion on the part of the monetary authorities ("the rule of experts").

At the 2013 American Economic Association meeting, Lawrence H. Summers debated John Taylor on the issue of rules versus discretion. Summers used a medical analogy to make the case for discretion, arguing that he wants his doctor "to be responsive to the medical condition" rather than "to be consistently predictable." Taylor responded by arguing that "relying on an all-knowing expert" who practices medicine without "a set of guidelines" is risky: "checklists are invaluable for preventing mistakes" just as a rules-based monetary strategy is. This is not to say that doctors don't need to exercise good judgment in designing checklists. They do. But that discretion is different from "a checklist-free medicine."[2] One could also argue that underlying Summers's preference for "a doctor who most of the time didn't tell me to take some stuff" is a fundamental rule: "Do no harm."

Taylor (2015: 10) recognizes that "some rules are better than others, and it makes perfect sense for researchers and policymakers to be looking for new and better rules." The focus should be on long-run strategy, not short-run tactics. The Fed did implicitly follow a Taylor rule during the Great Moderation, from the mid-1980s to 2007, and Taylor thinks that rule "does a good job at keeping nominal GDP on a steady growing trend."

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[2] For a summary of the debate, see Taylor (2015: 11).

Taylor (2015: 4) does not recommend following "a rule mechanically"—
"judgement is required to implement the rule." He is thinking primarily of rules within the
context of a government fiat money system. The question then becomes what is to bind
policymakers to the rule. Although the Fed appears to have followed the Taylor rule in
setting its policy rate during the Great Moderation, that adherence begin to erode
around 2003–05, when the fed funds rate was pushed significantly below the rate
prescribed by the Taylor rule (ibid., p. 5).

The Fed has not returned to any rules-based monetary policy even though Fed
chairman Ben Bernanke argued in 2015 that the Fed was following a rule of
"constrained discretion." However, as Taylor notes, what Bernanke viewed as a rule—
namely, setting goals (e.g., targeting inflation and employment)—differs substantially
from adopting a rules-based monetary *strategy*. According to Taylor (2015: 12), "Simply
having a specific numerical goal or objective function is not a rule for the instruments of
policy; it is not a strategy; in my view, it ends up being all tactics."

In order to better understand the case for rules over discretion, it is essential to
recognize the knowledge problem confronting policymakers, the value of having time-
consistent rules to reduce uncertainty, and the need to reduce the risk that monetary
policy may become politicized as public choice theory describes.

The Knowledge Problem

In his classic essay "The Use of Knowledge in Society," F. A. Hayek (1945: 519–
20) defined the "economic problem of society" as "a problem of the utilization of

knowledge which is not given to anyone in its totality." That problem implies monetary policymakers are not omniscient: they cannot know the structure of a complex economic system; their models will have serious flaws and forecast errors; there are long and variable lags in the effects of monetary policy, as noted by Milton Friedman (1968); and constant changes in economic data make it difficult to distinguish between permanent and transitory changes.

A discussion of the Hayekian knowledge problem, as it relates to monetary policy, is presented in O'Driscoll (2016). He argues that "unavoidable errors are an essential feature of discretionary policy" (p. 343), and that a rules-based monetary regime could help reduce uncertainty—an idea that both Hayek and Milton Friedman accepted. According to O'Driscoll (p. 350), "Hayek and Friedman agreed that we know too little to design an optimal monetary policy. . . . A monetary rule facilitates the emergence of a monetary order."

Glenn Hubbard, former chairman of the Council of Economic Advisers under President George W. Bush, echoed those problems when he recently remarked, "Ignorance of economic conditions or doctrinaire attention to false models may blow Fed policy off course" (Hubbard 2017).

Nevertheless, Fed Vice Chairman Stanley Fischer, speaking at a Hoover Institution conference on May 5, 2017, argued that committees of experts rather than rigid rules are the best approach to sound monetary policymaking.[3] According to Fischer, experts must "be continuously on the lookout for structural changes in the

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[3] For a critique of Fischer's "rule-by-experts" approach to monetary policymaking, see White (2017).

economy and for disturbances to the economy that come from hitherto unexpected sources." However, the knowledge problem precludes such changes and disturbances from being known beforehand; hence, Fed action is often destabilizing.

A discretionary monetary regime suffers most from these flaws and can be improved upon by moving to a rules-based regime (Friedman 1968). Monetary rules that are operational, credible, and enforceable could help reduce uncertainty.

Rules that are market based, don't rely on experts, and can evolve as learning occurs would be in line with Hayek's warning against the "pretense of knowledge." In his Nobel Memorial Lecture, Hayek ([1974] 1989: 7) stated: "To act on the belief that we possess the knowledge and the power which enable us to shape the processes of society entirely to our liking, knowledge which in fact we do not possess, is likely to make us do much harm." In monetary policy, relying on the Phillips curve and aggregate demand management to obtain full employment is an evident example of hubris.

The Fed's recent *Monetary Policy Report* (July 7, 2017) reflects the thinking of many Fed officials on the adoption of a money rule: "The U.S. economy is highly complex, and these rules, by their very nature, do not capture that complexity" (Board of Governors 2017: 36–37). In fact, it is the complexity of the economy that makes rules beneficial and more likely to bring about monetary and financial stability than pure Fed discretion.

Absence of Credible Commitment under a Discretionary Regime

Even if monetary authorities could centralize all the relevant information, a discretionary regime would not escape the problem of "time inconsistency" that Kydland and Prescott (1977) have pointed out.[4] Under discretion, there is no guarantee that future policy will be consistent with current policy: monetary policymakers will be tempted, for example, to deviate from a commitment to maintain price stability in order to stimulate full employment by exploiting the short-run Phillips curve. Adherence to a monetary rule can improve policy outcomes if the rule amounts to a credible commitment.

In his classic book *Interest and Prices*, Michael Woodford (2003) criticizes optimal control theory as applied to monetary policy while supporting the case for credible rules to reduce regime uncertainty and achieve long-run price stability. He opposes period-by-period policymaking, which he sees as destabilizing, compared to a rules-based regime:

> It is not enough that a central bank have sound objectives …, that it make policy in a systematic way, using a correct model of the economy and a staff that is well-trained in numerical optimization, and that all this be explained thoroughly to the public. A bank that approaches its problem as one of optimization under *discretion*—deciding afresh on the best action in each decision cycle, with no commitment regarding future actions except that they will be the ones that seem best in whatever circumstances may arise—may obtain a substantially worse outcome, from the point of view of its own objectives, than one that commits itself to follow a properly chosen *rule* [Woodford 2003: 18–19].

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[4] See White (1999: chap. 10) for an overview of the time-inconsistency case for rules, as first presented by Kydland and Prescott (1977) and elaborated on by Barro and Gordon (1983).

Bennett McCallum, a member of the Shadow Open Market Committee, offers a similar criticism of discretionary policy:

> The absence of rule-based policymaking means the absence of any systematic process that the public can understand and use as the basis for its expectations about future policy. The Fed apparently sees communication as a device for affecting expectations, but rational private agents form expectations on the basis of their understanding of the process by which the central bank actually conducts policy. If the central bank fails to adopt a process involving rule-based policymaking—that is, a commitment to some clearly stated objectives—its attempts to influence expectations are unlikely to be productive [McCallum 2004: 370].

A monetary rule is a constraint on the monetary authority in line with the rule of law. It addition to reducing regime uncertainty and increasing predictability of money and prices, a credible rule reduces the concentration of power over monetary matters and expands economic freedom. As Milton Friedman notes, in reference to the Fed's failure to maintain monetary stability during the Great Depression when the money supply contracted by nearly 30 percent, "much harm can be done by mistakes on the part of a few men when they wield vast power over the monetary system of a country" (Friedman 1962: 50).

When policymakers have to follow known rules that recognize the limits of monetary policy and the social value of maintaining sound money, markets will be better able to perform their incentive, information, and allocation functions. There will be less risk of government intervention (e.g., price controls, credit allocation, and the politicization of investment) under a rules-based monetary regime than a discretionary

regime. Government power grows, and economic freedom declines, when money and markets are in disorder, as we learned from the Great Depression, the high inflation and ensuing price controls of the 1970s, and the Great Recession, which greatly increased the Fed's monetary and regulatory powers.

The Case for a Monetary Constitution

Monetary authorities have an incentive to increase their discretionary powers, especially during a crisis. When the Federal Reserve started operating in 1914, its powers were narrowly limited. Today, the Fed's balance sheet has reached $4.5 trillion and it engages in massive credit allocation and financial regulation. The 2008 financial crisis greatly expanded the Fed's powers and there is little incentive for Federal Reserve Board members to relinquish those powers.

Public choice theory describes how incentives operate within the public sector and how the administrative state feeds on itself. Constitutional political economy makes the case for limited government and the rule of law. To stem the incentives for monetary bureaucrats to expand their fiefdoms, their powers need to be limited by a strict monetary rule or constitution.

To be credible, a rule must be enforceable. In this regard, Selgin (2016b) distinguishes between "real and pseudo monetary rules." In contrast to a pseudo monetary rule, which merely acts as a policy guide and is subject to change, a real monetary rule "must be rigorously enforced so that the public is convinced there will be no deviations from the rule." It must also be "robust," meaning "the rule must be capable of perpetuating itself, by not giving politicians or the public reason to regret its

strict enforcement and to call either for its revision or its abandonment in favor of discretion" (p. 282).

The network of private contracts that characterized the classical gold standard, for example, were strictly enforced and allowed markets to determine the quantity of money without interference from central banks. People had confidence in the long-run value of their money, which enabled them to borrow at reasonable interest rates for long periods of time. Commerce and investment were energized as a result.

While some economists (e.g., Buchanan 1962) favor a monetary constitution that retains a central bank but limits its powers, others (e.g., Hayek 1978) prefer a free-market monetary system. Between those two extremes there are many other sorts of monetary rules, many of which retain some degree of discretion for policymakers. For example, under inflation targeting, the monetary authority can arbitrarily change the target. Likewise, under the Taylor rule, more emphasis can be placed on reducing unemployment or closing the output gap rather than on achieving long-run price stability.

In making the case for rules over discretion, one should recognize that, under discretion, "the money-using public, uncertain about what the central bank experts will decide to do will hedge more and invest less in capital formation than they would with a credibly committed regime" (White 2017: 3) In contrast, "a commodity standard—especially without a central bank to undermine the redemption commitments of currency and deposit issuers—more completely removes policy uncertainty and with it overall

uncertainty." Consequently, there is a strong case for "a market-guided monetary system" rather than "expert-guided monetary policy" (ibid.).

The Theory of Monetary Disequilibrium

The case for a rules-based monetary regime can be better appreciated by an understanding of the theory of monetary disequilibrium—and thus the importance of limiting the power of central banks to manipulate money and interest rates.

Discrepancies between the quantity of money demanded and supplied at some prevailing price level set into motion an adjustment process during which real variables are influenced as the economy works its way toward a new equilibrium price level. Sticky prices and wages, as well as other institutional rigidities and the fact that money has no market of its own, mean not only that monetary disturbances are possible but that they can have pervasive effects on real economic activity during the transition process.

According to Warburton (1949: 107), "The duration and amplitude of a business depression resulting from monetary disequilibrium depends not only on the degree of that disequilibrium, but also on the tenaciousness of rigidities in the cost-price structure." Thus, the theory of monetary disequilibrium may properly be called "a theory of the effect of price rigidities under an erratic supply of money."[5] Moreover, liquidity effects and other shorter-run real interest rate effects of monetary policy occur precisely because the price level doesn't instantly adjust to disturbances in the demand and supply of money.

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[5] For a detailed discussion of the theory of monetary disequilibrium, see Warburton (1966, especially his list of postulates underlying that theory, pp. 28–29). Also see Yeager (1986, 1997) and Dorn (1987).

The fact monetary disequilibrium can persist for a significant time means that monetary policy can distort relative prices, especially intertemporal prices (i.e., interest rates) and misallocate capital. As Claudio Borio, head of the Monetary and Economic Department at the Bank for International Settlements, notes: "Monetary policy can fuel financial booms and their subsequent bust," and in the process lead to long-lasting misallocation of resources, lower productivity, and a permanent loss of output (Borio 2016: 219–20).

Borio also addresses the idea that monetary disequilibrium can affect asset prices by driving a wedge between the market rate of interest and the equilibrium or natural rate that brings voluntary saving in line with private investment. According to Borio (2016: 214–19), in thinking about the Wicksellian natural rate of interest, it is not sufficient to consider only potential output and expected inflation; one must also consider financial stability. One cannot say that market rates are at equilibrium if there is financial instability. The natural rate of interest is unobservable; it is misleading to assume that the absence of inflation and the attainment of full employment signal that market rates are at their equilibrium levels—one must also check for a "build-up of financial imbalances."

In Borio's view, monetary policy

> has failed to lean against unsustainable financial booms. The booms and, in particular, subsequent busts have caused long-term economic damage. Policy has responded very aggressively and, above all, persistently to the bust, sowing the seeds of the next problem. Over time, this has imparted a downward bias to interest rates and an upward one to debt [Borio 2016: 226].

Central banks find it hard to increase interest rates because of fear that higher rates will deflate asset bubbles created by previous policy decisions to reduce interest rates. Moreover, politicians favor lower rates to keep the cost of deficit financing at bay. In such an environment, rates are likely to stay too low for too long, thus increasing the ultimate cost of adjustment.

It is also misleading, argues Borio (2016: 222–25), to view all episodes of deflation as bad. In particular, a gently falling price level during times of high real economic growth should be distinguished from sharply falling prices due to a prior monetary collapse, as happened from 1929–33, when the money supply fall by one-third during the Great Contraction (Friedman and Schwartz 1960). What should be avoided is demand-driven deflation, not productivity-induced deflation (Selgin 1997).

Finally, the idea that monetary policy can directly affect asset prices and distort investment decisions—even when official measures of inflation (such as the CPI or PCE) remain stable—is evident in the impact of recent, unconventional monetary policy on the prices of stocks, bonds, and real estate, with little impact on conventional measures of inflation.

Monetary disequilibrium theory holds that financial stability is best achieved by minimizing monetary instability, which means controlling the growth of money and credit to achieve stable growth of nominal GDP and long-run price stability. Under the classical gold standard, long-run price stability was ensured as the supply of money responded to changes in the demand for money. As Lawrence H. White (2017: 2) notes,

The actual track record of the classical gold standard *is superior* in major respects to that of the modern fiat-money alternative. Compared to fiat standards, classical gold standards kept inflation lower (indeed near zero), made the price level more predictable (deepening financial markets), involved *lower* gold-extraction costs . . . , and provided stronger fiscal discipline. The classical gold standard regime in the US (1879–1914), despite a weak banking system, *did no worse* on cyclical stability, unemployment, or real growth.

Central banks tried to improve on that regime but have ended up with a pure fiat money system not subject to any clearly defined monetary rule to reduce uncertainty about the future path of money and prices—and business fluctuations in the United States have not lessened (Selgin, Lastrapes, and White 2012).

Alternative Monetary Rules

Monetary rules can be classified either as (1) limits placed on a discretionary central bank issuing government fiat money or (2) the replacement of a central bank with a free banking system under a commodity standard.[6] Rules applicable to the first category include inflation targeting, a price level rule, a Taylor rule, and demand rules aimed at achieving a stable growth path of nominal income. The second category of "rules" is greater in scope, but could, for example, consist of defining the dollar in terms of gold and allowing private banks to issue currencies convertible into gold.

Broad "meta-rules," such as Peter Bernholz's (2017: 100) call for "a concrete plan for a monetary constitution"—the key provision of which is "a constitutional safeguard that prevents governments and central bankers from influencing the stock of

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[6] For an in-depth discussion of alternative monetary rules, see White (1999) and Dorn (2017).

money"—are in line with Hayek's call for "a constitution of liberty."[7] True meta rules, such as the gold standard unconstrained by central banks, would be virtually devoid of discretionary elements. There would be no need to worry about defining and measuring policy objectives or estimating coefficients in equations representing the rule. Free markets, rather than policymakers, would operate to bring about monetary equilibrium.

Under Article 1, Section 8 of the U.S. Constitution, Congress has the authority "to coin Money [and] regulate the Value thereof." Those enumerated powers have been delegated to the Federal Reserve, but with little oversight and wide discretion. As James Buchanan (1988: 33) has noted,

> The dollar has absolutely no basis in any commodity base, no convertibility. What we have now is a monetary authority [the Fed] that essentially has a monopoly on the issue of fiat money, with no guidelines that amount to anything; an authority that never would have been legislatively approved, that never would have been constitutionally approved, on any kind of rational calculus.

Indeed, today's pure fiat money system, and the lack of any monetary rule to limit discretion, is not something the Framers would have sanctioned. James Madison, the chief architect of the Constitution recognized that

> the only adequate guarantee for the uniform and stable value of a paper currency is its convertibility into specie—the least fluctuating and the only universal currency. I am sensible that a value equal to that of specie may be given to paper or any other medium, by making a limited amount necessary for necessary purposes; but what is to ensure the inflexible

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[7] For a discussion of meta-monetary rules, see Boettke, Salter, and Smith (2016). On the idea of a "monetary constitution," see Yeager (1962) and White, Vanberg, and Köhler (2015).

adherence of the Legislative Ensurers to their own principles and purposes? [Madison 1831].

The courts and culture have eroded the Framers' monetary constitution (Timberlake 2013, Vieira 2017). Any link of the dollar to gold was officially ended in August 1971, when President Nixon closed the gold window. However, long before that event the Fed abandoned what Clark Warburton called "the convertibility theory of monetary control," and never explicitly adopted the "responsibility theory of monetary control" to manage a fiat money regime. Under the convertibility theory, which was incorporated into the original Federal Reserve Act of 1913 but discarded by the monetary legislation of the early 1930s, the decisions of households and firms determine the quantity of money. The government's role is to ensure convertibility of notes and deposits into base (commodity) money. Under the responsibility theory, the decisions of central bankers determine the quantity of fiat money and maintain its value (Warburton 1966: 291–92).

The fact that present monetary law in the United States incorporates neither the *convertibility theory* nor the *responsibility theory* means monetary law remains in the same unsettled condition Warburton found it in 1946: "Monetary law in the United States is ambiguous and chaotic, does not contain a suitable principle for the exercise of the monetary power held by the Federal Reserve System, and has caused confusion in the development of Federal Reserve policy" (Warburton 1966: 316).

The Federal Reserve Reform Act of 1977 amended the Federal Reserve Act and implicitly adopted a monetary rule to limit growth in the monetary aggregates to long-run economic growth in order to achieve price stability. However, there was no operational

rule and other objectives were added—namely, "maximum employment" and "moderate long-run interest rates."[8] Moreover, there was no enforcement mechanism to hold the Fed responsible. Section 2A stated: "Nothing in this Act shall be interpreted to require that such ranges of growth or diminution [in the monetary aggregates] be achieved if the Board of Governors and the Federal Open Market Committee determine that they cannot or should not be achieved because of changing conditions."

Today Section 2A simply reads:

The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.

Yet, the Fed pays little attention to monetary aggregates, has engaged in credit allocation to satisfy special interest groups, pays interest on excess reserves (IOER), and fails to recognize the limits of monetary policy in promoting long-run economic growth.

The Fed has rejected arguments for rules over discretion, showing that the Reform Act of 1977 did not succeed in truly implementing a monetary rule. Still, Congress can have the final say. Indeed, Congress is currently considering moving toward a rules-based regime and establishing a Centennial Monetary Commission to examine the Fed's performance since its creation in 1913 and to consider various reforms.

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[8] See Pub. L. 95–188, 91 Stat. 1387, enacted November 16, 1977.

The Financial CHOICE Act of 2017 makes the Fed responsible for specifying a monetary rule, while Congress would be required to use the Taylor rule as a benchmark or default rule. That rule specifies how the fed funds rate is to be adjusted based on the output gap (i.e., deviations of actual from potential output) and desired inflation, or more precisely, deviations of actual inflation from the chosen target (Taylor 1993). The Taylor rule rests on guestimates of potential output and the Wicksellian natural rate of interest. The uncertainty regarding the value of those elements makes implementing the Taylor rule problematic, especially during times of financial turmoil. Furthermore, the rule formulates current policy based on past information as output and inflation measures are made available with lags.[9]

Simpler rules include: Milton Friedman's (1960) *k* percent rule, which calls for money growth to be constant; a price-level rule designed to achieve long-run price stability by controlling the monetary base; inflation targeting; and nominal income targeting. Friedman's *k* percent rule assumes that the demand for money (or its velocity) is stable. However, after the velocity of money became less stable, Friedman (1987) advocated freezing the monetary base and allowing the issuance of private bank notes.[10]

A price-level rule is plagued by long and variable lags in the relationship between money and prices,[11] while an inflation-target rule may be destabilizing in the sense that

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[9] For these and other reasons, Beckworth and Hendrickson (2016) argue that the basic Taylor rule is inferior to a nominal GDP rule. Also see Beckworth, Selgin, and Bahadir (2105) on the case for a nominal GDP rule.

[10] One could argue that Friedman's *k* percent rule was never really tried and that if it had been, monetary velocity may have been more stable (see White 1999: 223).

[11] Haraf (1986: 361) has argued that, under a properly specified price-level rule, there would be increased certainty about future price levels that would improve the environment for nominal contracting. That

a negative supply shock could temporarily increase inflation, leading to a tightening of monetary policy that would worsen the fall in output. For those reasons, there has been a resurgence of interest in demand rules aimed at stabilizing nominal GDP (NGDP).[12]

Scott Sumner, director of the Program on Monetary Policy at George Mason University's Mercatus Center, is a well-known proponent of NGDP targeting, which he thinks superior to alternative monetary rules (Sumner 2014). One benefit of NGDP targeting is that it bypasses the issue of assigning weights under the Fed's dual mandate to achieve price-level stability and maximum employment. All that needs to be done is to set a target path for the growth of NGDP (i.e., the sum of real GDP growth and inflation). So if the NGDP growth target is set at 5 percent, market forces will determine real growth and the Fed will supply the monetary base sufficient to hit the designated NGDP target. This strategy avoids having to fine tune monetary policy and would help circumvent the knowledge problem (see Beckworth 2017).

William Niskanen (1992: 284) has made a strong case for a demand rule targeting nominal domestic final sales. He argues that "a demand rule is superior to a price rule because it does not lead to adverse monetary policy in response to unexpected . . . changes in supply conditions. Similarly, a demand rule is superior to a money rule because it accommodates unexpected changes in the demand for money," meaning unanticipated changes in the velocity of money. Niskanen sees base money

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improvement would reduce the lag between changes in the monetary base and the speed at which the observed price level approaches the target level. If so, a major objection to price-level targeting is removed. For further support of a price-level rule, see McCulloch (1991) and Dittman, Gavin, and Kydland (1999).

[12] Early proponents of nominal income targeting include Robert Hall (1981) and Robert Gordon (1985). George Selgin's "productivity norm" is also a type of demand rule, in which the price level would be allowed to vary inversely with real output while maintaining a stable path of aggregate spending (Selgin 1997).

as the best *instrument* to achieve a stable path for nominal income—and thus superior to using the fed funds rate.[13]

Bennett T. McCallum (1989: chap. 16) also calls for using the monetary base as an instrument. However, he prefers a feedback rule that, like Sumner's, "would aim at a zero inflation rate on average and would not attempt to be highly ambitious with regard to its effect on cyclical variation of real variables." Accepting Warburton's (1949) argument against erratic money, McCallum seeks to avoid "abrupt changes in conditions due to monetary policy itself" (p. 338). He would allow the monetary base to grow in line with long-run real output growth adjusted for the growth in velocity averaged over the past four years. Nominal income would then tend to grow at a stable, noninflationary rate reflecting the trend growth in real output.[14]

A Club of Financial Stability

Karl Brunner (1987: 49–51) once called for an international "club of financial stability" in which member states would agree to bind themselves to a monetary rule and thereby help reduce the uncertainty inherent in a discretionary government fiat

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[13] Interest rates are not a good indicator of the stance of monetary policy: if the Fed increases money growth, and money incomes and inflation expectations rise, nominal interest rates will follow. Changes in base money are a better indicator, but only if base velocity is stable so there is a predictable relationship between base money, monetary aggregates, and nominal income. The best indicator is the behavior of spending itself.

[14] See White (1999: 223–24) for the simple analytics of the McCallum rule. Christensen (2011) provides "a market monetarist version of the McCallum rule."

money regime.[15] Allan Meltzer (1989: 83) has argued that internal and external stability

could be achieved if major countries each set "the rate of growth of the monetary base

equal to the difference between the moving average of past real output growth and past

growth in base velocity." Doing so would anchor future expected prices and, with

anticipated inflation stable, reduce the "variability of exchange rates arising from

differences in expected rates of inflation" (ibid.).[16]

Meltzer's rule is mildly activist but nondiscretionary; characteristics also present

in McCallum's (1984) rule. Choosing to stabilize the *anticipated* price level, rather than

the actual price level, eliminates the need "to reverse all changes in the price level"

(Meltzer 1989: 79). Instead, under Meltzer's rule, the actual price level is allowed "to

adjust as part of the process by which the economy adjusts real values to unanticipated

supply shocks" (ibid.). In other words, Meltzer's monetary rule "adjusts fully to

permanent changes in growth rates of output and intermediation (or other changes in

the growth rate of velocity) within the term chosen for the moving averages," but

ignores "short-term, transitory changes" (p. 81). Unlike a strict NGDP rule, Meltzer's

rule would accommodate persistent output changes with correspondingly more or less

rapid money growth to achieve a mean-reverting long-run price level, much like that

seen under the classical gold standard.

Unconventional Monetary Policy and the Plugged-Up Monetary Transmission Mechanism

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[15] On the importance of rules for obtaining monetary order and reducing the uncertainty present in a discretionary government fiat system, see Brunner (1985).

[16] Meltzer's rule to stabilize the *anticipated* domestic price level of those countries who adopt his rule would still allow nominal exchange rates to vary with real exchange rates. In particular, "anticipated and actual exchange rates would be subject to change with changes in relative productivity growth, rates of growth of intermediation, differences in rates of saving, in expected returns to capital, in labor-leisure choice or other real changes" (Meltzer 1989: 80–81).

In the current environment, with the Fed paying interest on excess reserves at a rate above what banks can get on highly liquid assets, the absence of a fully functioning fed funds market, and complex macroprudential regulations that discourage bank lending,[17] Meltzer's monetary rule (as well as other rules relying on the traditional links between base money, broader monetary aggregates, spending, and prices) would be difficult, if not impossible, to implement. In particular, by paying interest on excess reserves above the opportunity cost of those reserves, the Fed has increased the demand for holding excess reserves (rather than lending them out and creating a multiple expansion of deposits). Consequently, there has been a significant reduction in the size of the money multiplier, meaning there is a much weaker link between base growth and money growth than in the precrisis era.[18]

Before serious consideration can be given to implementing any rule-based monetary regime, the Fed needs to normalize monetary policy by ending interest on excess reserves and shrinking its balance sheet to restore a precrisis fed funds market. Once changes in base money can be effectively transmitted to changes in the money supply and nominal income, the adoption of a monetary rule would reduce uncertainty and spur investment and growth.

Under the Fed's unconventional monetary policies, the growth rate of base money has far exceeded the growth of monetary aggregates and has not

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[17] On the impact of unconventional monetary policy on bank lending, especially the effect of overly zealous maroprudential regulation, see Calomiris (2017).

[18] For an extensive discussion of the impact of IOER on the monetary transmission mechanism, see Selgin (2017a, 2017b, 2017d).

led to substantial, let alone rapid, growth of nominal income. Conventional price inflation has been tame.

The large-scale purchases of longer-term Treasury securities and mortgage-backed securities have swelled the Fed's balance sheet to $4.5 trillion from less than $1 trillion before the crisis. However, banks have not lent out most of the new base money, and private investment has remained sluggish. Meanwhile, the Fed has used administrative measures to set a range for the fed funds rate—interest on excess reserves to set the upper limit and reverse repos to set the lower limit.[19] The Fed has also engaged in credit allocation, used forward guidance to influence market perceptions of future rates, encouraged risk by underpricing it, penalized savers with ultra-low interest rates, and encouraged debt.

The problem is that, with massive amounts of excess reserves, there is no viable market for fed funds—more precisely, the only trading is arbitrage between GSEs that are not eligible for IOER and banks that are. Ending unconventional monetary policy by shrinking the Fed's balance sheet, while eliminating interest on excess reserves and the use of reverse repos, would help

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[19] There is no doubt that payment of interest on excess reserves (beginning in October 2008) at a rate exceeding interest on highly liquid assets (such as short-term Treasuries), has sterilized much of the newly created base money from the Fed's large-scale asset purchases. For a more detailed discussion of monetary control before and after the 2008 financial crisis, see Selgin (2017a) and Jordan (2016, 2017).

normalize monetary policy and restore the money multiplier to its precrisis values. The implementation of a demand rule would then be feasible.[20]

Although the Fed has begun to increase the target range for the fed funds rate and has announced plans to shrink its balance sheet, the expectation is that the Fed will move very slowly and reverse course if asset prices tumble, disinflation occurs, or recession sets in.

Toward a Forecast-Free Monetary Regime

Leland Yeager (1992: 71) has proposed eliminating monetary disequilibrium by decentralizing and privatizing money, defining the unit of account "by a comprehensive bundle of goods and services," and letting competition among private issuers "keep meaningful the denomination of their bank notes and deposits (and checks) in the stable, independently defined unit."[21] He argues that those steps would take us much closer to a forecast-free monetary regime than our current government fiat money system under a highly discretionary central bank. Moreover, he is skeptical of "ideally managed government fiat money," because that approach to monetary reform "precludes decentralizing and privatizing the issue of money" (ibid.). Absent a fundamental reform, he would favor a price-level rule over a demand rule.[22]

Monetary Freedom and Monetary Order

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[20] Belongia and Ireland (2015) have argued that the Fed could use Divisia monetary aggregates to make long-run targeting of NGDP feasible.

[21] For a more detailed discussion, see Greenfield and Yeager (1983), and Yeager and Greenfield (1989).

[22] Bradley and Jansen (1989: 40) contend that changes in the assumptions about the labor market can make a price-level rule theoretically superior to a demand rule. Also, they argue that "ignorance of the correct equations, parameter values and lag structure that characterize the U.S. economy reduces the appeal of nominal GNP targeting."

A rules-based monetary system would increase economic freedom and lead to a more harmonious monetary order. The choice of what rule to follow will depend on whether one has more confidence in the convertibility theory of monetary control or the responsibility theory. There is no perfect monetary system, so tradeoffs must be made among competing rules. Furthermore, as digital currencies evolve, there may be completely novel ways to achieve monetary and financial stability.

Some critics of government fiat money believe that a gold standard could supply a desirable rule. Others would combine the properties of a gold standard with free banking or digital currencies. Still others would prefer binding the Fed by a monetary rule that is aimed at stabilizing NGDP, the price level, or inflation.

Lawrence H. White (2012) favors restoring "a gold definition of the U.S. dollar," removing legal restrictions that prevent the emergence of a "parallel gold standard," and allowing the issuance of private gold-backed currencies that could be used as legal tender. He provides a roadmap for making the transition to a new gold standard, but recognizes the difficulty of doing so without a broad public consensus. If that consensus does develop, however, financial innovation could help facilitate the transition.

Much of the criticism of monetary freedom has rested on the argument that free-market currencies are inherently unstable and inferior to a government-directed monetary system. Kevin Dowd (2017) constructs a hypothetical model of a laissez-faire monetary regime—asking how a free-market in currencies would emerge absent any

central bank—and finds that its operating properties are consistent with stability and optimality, not chaos and inefficiency. The harmony that emerges under a market-based monetary system, argues Dowd, stems from the freedom to choose alternative currencies and the rule of law that binds the system together. White and Selgin discuss some historical examples of that stability.[23]

Conclusion

Congress is currently considering moving toward a rules-based regime and establishing a Centennial Monetary Commission to examine the Fed's performance since its creation in 1913, and to consider various reforms. In doing so, it should not neglect the importance of restoring constitutional money and understanding how alternative monetary regimes affect uncertainty.

Normalizing monetary policy requires restoring the fed funds market and reducing the size of the Fed's balance sheet, which means eliminating interest on excess reserves and ending reverse repos so that selling longer-term Treasuries and mortgage-backed securities is accompanied by an equal reduction in excess reserves.

As Tatom (2017: 51) notes,

The Fed could repair its balance sheet and boost bank credit simply by reversing past actions. Since the last recession began, the Fed has accumulated about $3.5 trillion of securities; 77 percent of bank receipts from these Fed purchases were added to excess reserves. Simply ending the subsidized interest on excess reserves would allow the Fed to sell the $2.7 trillion of its securities held at the peak of excess reserves in August 2014 and incur a matching decline in banks' excess reserves. Such an operation would have no effect on the effective monetary base, monetary aggregates or total credit created in the

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[23] See, e.g., White (1989), Selgin (2017c), Selgin and White (1987, 1994).

money creation process. Fed credit and excess reserves would contract by $2.7 trillion, but commercial bank credit would rise by an equal amount. This is precisely where risky assets should be held if banks are to promote growth and if the Fed is to get out of the credit allocation business.[24]

The problem is that any reduction or even announcement of such a reduction in Fed assets could trigger a sharp fall in asset prices (especially in bond markets where duration risk is high) and shake market confidence—as seen in the 2013 Bernanke "taper tantrum" when he announced that the Fed would exit its large-scale asset purchase program. Financial markets have relied on the Fed "put" for a long time and that expectation has made it difficult to change policy.

Also, unplugging the monetary transmission mechanism by ending interest on excess reserves while desirable, would force the Fed to confront the problem of how to stop existing excess reserves from leaking out into the financial system and thereby creating inflation. The Fed may then face a period of stagflation and decide to revert back to unconventional monetary policy to "stimulate" the economy. Thus, the Fed is essentially in a trap that will be difficult to exit.[25] That is why it is essential to have a national debate over the direction of monetary policy and how best to reform the Fed.

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[24] Selgin (2016a) provides a similar analysis.
[25] On the unsustainability of unconventional monetary policies and the exit problem, see Dowd and Hutchinson (2017: 313–17).

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